STATEMENT OF BASIS

LANDFILLS NUMBERS 1, 2, 3, AND 4
SOLID WASTE MANAGEMENT UNIT NOs. 22-25
45TH SPACE WING
PATRICK AIR FORCE BASE
BREVARD COUNTY, FLORIDA

PURPOSE OF STATEMENT OF BASIS

This Statement of Basis (SB) has been developed in order to inform the public and give the public an opportunity to comment on a proposed remedy to clean up contamination at the Landfills Numbers 1, 2, 3, and 4 (LF 1–4) . A 45th Space Wing (45th SW) installation restoration partnering (IRP) team consisting of United States Air Force (USAF), United States Environmental Protection Agency (USEPA), the State of Florida Department of Environmental Protection (FDEP), the U. S. Army Corps of Engineers, and various environmental consultants have determined that the proposed remedy is cost effective and protective of human health and the environment. However, prior to implementation of the proposed remedy, the 45th SW IRP team would like to give an opportunity for the public to comment on the proposed remedy. At any time during the public comment period, the public may comment as described in the "How Do You Participate" section of the SB. Upon closure of the public comment period, the 45th SW IRP team will evaluate all comments and issues raised in the comments and determine if there is a need to modify the proposed remedy prior to implementation.

Brief Site Description

LF 1-4 covers an area of approximately 140 acres on PAFB (See Figure 1). The four units were operated sequentially between 1940 and 1961, and were used for the disposal of office and cafeteria waste, as well as industrial waste. Currently, the PAFB golf course overlies much of the landfill area.

WHY IS CLEANUP NEEDED?

The results of the Remedial Investigation (RI) indicated that a potential human health risk might be posed by contaminants in several of the environmental media at the site (as listed in Table 1). These include: metals and two pesticides in groundwater; metals and a semi-volatile organic compound (SVOC) in surface water; and pesticides, a polychlorinated biphenyl (PCB), and an SVOC in fish tissue.

The Clean-up Remedy

The proposed clean-up remedy for LF 1-4 includes (but is not limited to) the following components:

- Natural attenuation of groundwater to remove contaminants through natural processes.
- Implementation of land use controls designed to prevent exposure to site contaminants,. These include:
  - Prohibition of residential development
  - Periodic monitoring of groundwater and surface water to document water quality and contaminant levels
  - Posting warning signs on-site

A complete list of land use controls and other protective measures are found in the LF 1-4 Land Use Control Implementation Plan (LUCIP).

HOW DO YOU PARTICIPATE?

The 45th SW IRP team solicits public review and comment on this SB prior to implementation of the proposed remedy as a final remedy. The final remedy for LF 1-4 will eventually be incorporated into the Hazardous and Solid Waste Amendments (HSWA) Permit for Patrick Air Force Base (PAFB).

In accordance with RCRA Section 7004(b), this Statement of Basis summarizes the proposed remedy for PAFB Landfill Nos. 1-5. For detailed information, consult the Landfill Nos. 1-5 RI Report which is available for review at the 45th SW Environmental Management Office (See "How Do You Participate") or on-line at http://www.mission-suppport.org/45SW_IRP_EA.

The public comment period for this SB and the proposed remedy will begin on the date that a notice of the SB's availability is published in a major local newspaper of general circulation. The public comment period will end 45 days thereafter.

If requested during the comment period, the 45th SW IRP team will hold a public meeting to respond to any oral comments or questions regarding the proposed remedy. To request a hearing or provide comments, contact the following person in writing within the 45-day comment period:

Mr. Jorge Caspary
FDEP-Bureau of Waste Cleanup
2600 Blair Stone Road, MS-4535
Tallahassee, FL 32399-2400
E-mail: Jorge.Caspary@dep.state.fl.us
Telephone: (850) 921-9986

The HSWA Permit , the SB, and the associated Administrative Record, including the RI Report, will be available to the public for viewing and copying at:

Environmental Management, CEV/ESC
Facility 1638, Samuel Phillips Parkway
Cape Canaveral Air Force Station, FL
For public access call (321) 853-0965

This information can also be found on-line at http://www.mission-support.org/45SW_IRP_EA

The HSWA Permit, the SB, and LF 1-4 Report summaries will be available for viewing and copying at:

Central Brevard Library
308 Forrest Avenue
Cocoa, Fl, 32922

To request further information, you may contact one of the following people:

Ms. Teresa Green
Environmental Restoration Element Chief
45 CES/CEVR
1224 Jupiter Street
Patrick Air Force Base, FL 32925-3343
E-mail: teresa.green@patrick.af.mil
Telephone: (321) 853-0965

Mr. Jorge Caspary
See previous contact information

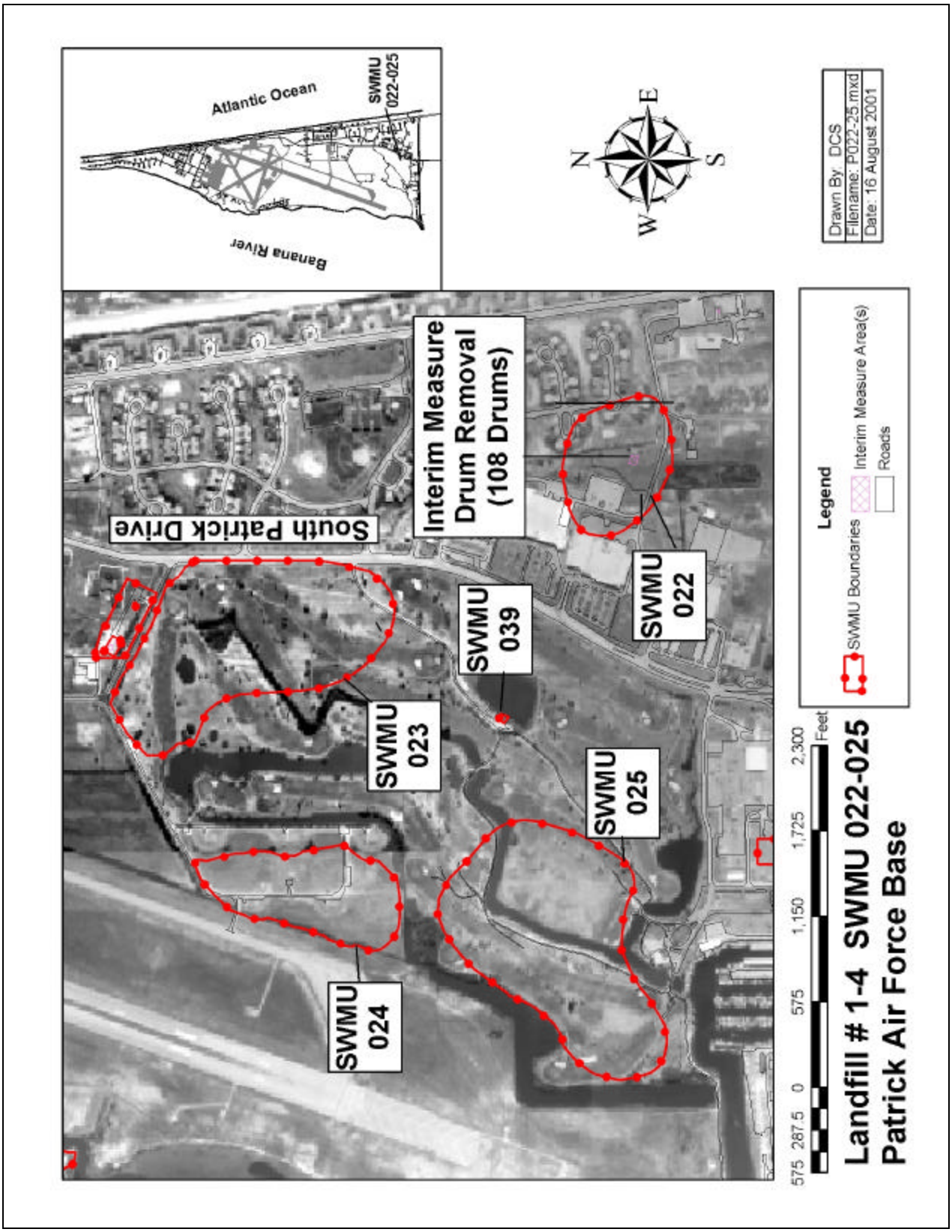
Mr. Timothy R. Woolheater, P. E.
EPA Federal Facilities Branch
Waste Management Division
Sam Nunn Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-8960
E-mail: woolheater.tim@epamail.epa.gov
Telephone: (404) 562-8510

FACILITY DESCRIPTION

USAF established the 45th SW as the primary organization for the Department of Defense aerospace force programs. Historically, the National Aeronautics and Space Administration (NASA) also performed space launch related operations on the 45th SW property. These operations have involved the use of toxic and hazardous materials. Under RCRA and the HSWA Permit (PAFB Permit No. FL257002404) issued by the USEPA, the 45th SW was required to perform an investigation to determine the nature and extent of contamination from Solid Waste Management Units (SWMU) No. 22, 23, 24, and 25 Landfills 1, 2, 3, and 4, (LF 1-4) respectively.

SITE DESCRIPTION AND HISTORY

LF 1-4 are inactive landfills located at the southern end of PAFB (See Figure 1). The Banana River is located approximately 700 to 800 feet west of Landfills 3 and 4, while the Atlantic Ocean is located approximately 300 to 400 feet east of Landfill 1. LF 1-4 were operated as trench and fill landfills. Similar materials were disposed in all four landfills, including office and cafeteria refuse, paint cans, paint spray booth filters, polychlorinated biphenyl filters, pesticide cans, asbestos, waste



In accordance with RCRA Section 7004(b), this Statement of Basis summarizes the proposed remedy for PAFB Landfill Nos. 1-5. For detailed information, consult the Landfill Nos. 1-5 RI Report which is available for review at the 45th SW Environmental Management Office (See "How Do You Participate") or on-line at http://www.mission-suppport.org/45SW_IRP_EA.

oil, and spent degreasing solvents. Operations at Landfill 1 began in 1940 and ended in 1948. Landfill 2 was active between 1950 and 1956. Finally, Landfills 3 and 4 operated from 1956 to 1961.

The four landfills cover an area of approximately 140 acres and were reportedly covered with sediment from the Banana River. They have been developed since the time of their closure in 1961. The base commissary, base exchange, and base housing are now located near Landfill 1. In 1964, the PAFB golf course was constructed on Landfills 2 and 4. The golf course contains drainage canals that discharge to the Banana River. According to golf course personnel, a variety of pesticides are (or have been) used for golf course maintenance, including aldrin, chlordane, toxaphene, curb, diquat, and monosodium monoarsenic.

The investigation and remediation of LF 1-4 have been consolidated due to proximity of the landfills and their similarities in disposed material, geology, and hydrogeology.

The USAF has conducted the following investigations:

- 1984: A Phase I Records Search including records review, site reconnaissance, and interview with knowledgeable personnel identified areas of concerns which warranted further investigation.
- 1986-1988: A Phase II Confirmation/ Quantification investigation was conducted, during which groundwater, surface water and sediment samples were collected. This investigation concluded that the presence of constituents in groundwater, surface water, and sediment might pose a risk to human health and the environment. The Phase II investigation recommended that a Phase III Investigation (RI) be conducted to assess the nature and extent of the contamination present at the site, and perform risk assessments to determine if the contamination is potentially detrimental to human or ecological health.
- 1989: An Interim Measure was conducted at Landfill 1 in order to determine the extent of buried drums that were identified during an electromagnetic survey, and to remove the drums. The drums were buried in a 100 foot by 100 foot area. Approximately 108 drums were removed and disposed of, along with associated contaminated soil.
- 1988-1997: The RI was initiated in 1988 and documented in a report that also addressed a number of other Sites. This RI was unable to adequately characterize and assess the contamination at LF 1-4. Consequently, a more robust RI was initiated in 1994 and detailed the sampling and analysis of site soil, groundwater, surface water, and sediment. These results were used to determine human health and ecological risks. The Human Health Risk Assessment (HHRA) indicated that potential risk exists from the site's groundwater and surface water. The Ecological Risk Assessment (ERA) indicated that no unacceptable ecological risk is present at the site.
- 1996-1997: A Feasibility Study (FS) was performed in order to select the appropriate remedy for the site. It was determined that monitoring of groundwater would be needed to ensure that contaminant levels are naturally attenuating in the subsurface and that land use controls would be implemented to ensure that human health would be protected from unacceptable exposure to site groundwater, surface water, sediment and landfill contents.
- 1997: A Long Term Monitoring (LTM) Work Plan was submitted in 1997 and LTM was initiated. The 45th SW IRP team felt it was incumbent to implement LTM immediately following the RI/FS in order to ensure that groundwater contaminants were appropriately monitored and tracked.

In accordance with RCRA Section 7004(b), this Statement of Basis summarizes the proposed remedy for PAFB Landfill Nos. 1-5. For detailed information, consult the Landfill Nos. 1-5 RI Report which is available for review at the 45th SW Environmental Management Office (See "How Do You Participate") or on-line at http://www.mission-suppport.org/45SW_IRP_EA.

SUMMARY OF SITE RISK

As part of the RI activities, an HHRA and an ERA were conducted to estimate the health and environmental risks associated with the site-specific contamination. The risk assessments were performed in accordance with risk management decision processes established by the USEPA, FDEP, and the USAF at the time the RI was initiated.

The Chemicals of Concern (COCs) identified for human health during the RFI were:

- Groundwater: arsenic, beta-BHC, delta-BHC, chromium, lead, thallium, vanadium, phenol
- Surface water: beryllium, lead, mercury, bis(2-ethylhexyl)phthalate
- Fish consumption: bis(2-ethylhexyl) phthalate, aroclor 1254, 4,4'-DDE, 4,4'-DDT, and mercury

Sediment was not included in the HHRA due to lack of viable exposure pathways. The risk assessment demonstrated that groundwater, surface water, and fish consumption pose potential unacceptable human health risk.

Soil exceeded the one in one million (1/1,000,000) cancer threshold for the hypothetical future child resident, the hypothetical future adult resident, and Base personnel. Arsenic was the primary contributor to cancer risk. However, when risk management considerations were taken into account (detected concentrations were within the background concentrations observed elsewhere on PAFB), it was determined that arsenic was not a human health risk concern.

Surface water exceeded the one in one million cancer risk threshold for the adult recreator, child recreator, and Base personnel. The primary contributor was beryllium. Surface water did not exceed the hazard index target value of 1.0 for any of the evaluated receptors.

Fish consumption exceeded the one in one million (1/1,000,000) cancer threshold and the hazard index target value of 1.0 for both the adult and the child recreator. The primary contributor to cancer risk was aroclor 1254. The most significant contribution to noncarcinogenic hazard resulted from aroclor 1254 and mercury.

Groundwater was assessed by comparison with screening values and background levels. Based on these comparisons, arsenic, beta-BHC, chromium, lead, thallium, vanadium, and phenol were determined to pose a potential risk to human receptors. Several other metals (aluminum, beryllium, iron, manganese) initially appeared to pose a potential human health risk, but upon evaluation of risk management considerations, they were determined not to pose an unacceptable risk. These risk management considerations included the fact that detected concentrations were less than the Maximum Contaminant Levels (MCLs) established by USEPA (beryllium), detected concentrations were less than the USEPA Risk Based Criteria (RBC-manganese), and elevated concentration that were an artifact of sampling methodology and were not re-produced with later samples from the same locations (iron, aluminum).

The ERA was conducted to evaluate the possibility that land and aquatic organisms (eco-receptors) may be at risk from site-related contaminants. The ERA was based on laboratory analyses of groundwater, soil, surface water, and sediment samples.

The ERA concluded that potential risk from the exposure to and/or ingestion of groundwater, soil, surface water, or sediment by eco-receptors is marginal. Several factors mitigate the potential concern. These could include routine facility operation and maintenance activities, less than optimal habitat found within facility boundaries, the extent of the eco-receptor's normal foraging area, and the seasonal variability associated with the amount of surface water present at any given time.

WHAT ARE THE CLEANUP OBJECTIVES AND LEVELS?

The remedial action objectives (RAOs) are to:

1) Protect humans from exposure to shallow groundwater and prevent consumption of groundwater from the shallow aquifer (where contaminant concentrations are higher than regulatory standards),
2) Prevent consumptive use of fish and other biota from the site's surface water, due to contaminants that poses potential human health hazard from ingestion,
3) Prevent exposure to surface water, and
4) Protect humans and the environment from exposure to landfill contents.

Table 1 lists the COCs present at LF 1-4. The first column lists the chemical name, the second column second the maximum concentration detected in the impacted media at LF 1-4 during the RI, and the last column presents the clean-up level to be achieved at the site.

TABLE 1 –CLEANUP GOALS

Site-Related Chemicals of Concern (COCs)	Maximum Detected Concentration	Site-Specific Clean-up Level[1]
GROUNDWATER		
Arsenic	120 ug/L	50 ug/L
Beta-BHC	1,110 ug/L	0.1 ug/L
Chromium	190 ug/L	100 ug/L
Delta-BHC	0.064 ug/L	0.05 ug/L
Lead	100 ug/L	15 ug/L
Thallium	7 ug/L	2 ug/L
Vanadium	150 ug/L	49 ug/L
Phenol	88 ug/L	10 ug/L
SURFACE WATER		
Beryllium	0.8 ug/L	0.131 ug/L
Lead	43 ug/L	3.2 ug/L
Mercury	0.9 ug/L	0.12 ug/L
Bis(2-ethylhexyl) phthlate	3.7 ug/L	3 ug/L
FISH TISSUE[2]		
Bis(2-ethylhexyl) phthlate	7.3 mg/kg	0.0093 mg/kg
Aroclor 1254	0.31 mg/kg	0.01 mg/kg
4,4'-DDE	0.068 mg/kg	0.0005 mg/kg
4,4'-DDT	0.078 mg/kg	0.041 mg/kg
Mercury	0.2 mg/kg	0.23 mg/kg

[1] Clean-up level represents the most stringent value among USEPA and FDEP criteria at the time of the final investigation.
[2] Fish Tissue Clean-up level is from USEPA Screening Values for Chemical Residue in Fish Tissue.

CLEANUP ALTERNATIVES FOR LANDFILLS 1, 2, 3, and 4

Clean-up alternatives are different combinations of plans to restrict site use and to contain, remove, and/or treat contamination in order to protect public health and the environment. Only two alternatives were considered because of

low levels of contamination present at the LF 1-4. The clean-up alternatives considered for LF 1-4 are summarized below.

No Action: Evaluation of the No-Action alternative is used as a basis for comparison with other alternatives. Under this alternative, no remedial action would be taken to reduce human health risks or restrict site use. No monitoring of COC concentrations in the groundwater or surface waters would be performed. It was determined this alternative would not attain the RAOs.

Land Use Controls and Natural Attenuation with Long Term Monitoring: Under this alternative, material processes such as biological degradation, dispersion, advection, and adsorption would reduce COC concentrations to cleanup levels over time. Groundwater would be regularly sampled and analyzed to monitor and document the decrease in contaminant concentrations. Data collected during the RI and other Basewide assessments indicate that attenuation will likely reduce contaminant concentrations below cleanup levels within 30 years. Additionally, site-specific land use controls would be implemented to limit unacceptable exposure to surface waters, prevent consumption of shallow groundwater, limit exposure to shallow groundwater, and prevent fishing at the site. Other controls would be put in place to ensure that landfill integrity and the soil cap are maintained, that landfill materials are not contacted or released without proper notification and coordination with the regulatory agencies, and that construction on the landfill is restricted. In the long term, this remedy alternative will meet RAOs and will also allow re-evaluation to determine if the remedy is working and provide an opportunity for change if necessary. The 45th SW, USEPA, and FDEP have entered into a Memorandum of Agreement (MOA), which outlines how institutional controls will be managed at the 45th SW. The MOA requires periodic inspections, condition certification and construction project coordination, and agency notification. Site-specific details can be found in the LF 1-4 Land Use Control Implementation Plan (LUCIP).

EVALUATION OF REMEDY ALTERNATIVES

Each cleanup alternative was evaluated to determine how each potential remedy would comply with the four general standards for corrective measures. The four general standards for corrective measures are:

- Overall protection of human health and the environment;
- Attain media cleanup standards;
- Control the sources of releases; and
- Comply with standards for management of wastes

The second alternative (Land Use Controls and Natural Attenuation with Long-Term Monitoring) meets each of the above criteria, while the no action alternative remedy would not meet them.

LAND USE CONTROLS AGREEMENT

By separate MOA dated 23 December 1999, with USEPA and FDEP, PAFB, on behalf of the Department of the Air Force, agreed to implement base-wide, certain periodic site inspection, condition certification, and agency notification procedures designed to ensure the maintenance by installation personnel of any site-specific land use controls deemed necessary for future protection of human health and the environment. A fundamental premise underlying execution of that agreement was that through the USAF's substantial good-faith compliance with the procedures called for therein, reasonable assurances would be provided to the USEPA and FDEP as to the permanency of those remedies which included the use specific land use controls.

Although the terms and conditions of the MOA are not specifically incorporated or made enforceable herein by reference, it is understood and agreed by the USAF, USEPA, and

FDEP that the contemplated permanence of the remedy reflected herein shall be dependent on PAFB's substantial good-faith compliance with the specific land use control maintenance commitments reflected therein. Should such compliance not occur or should the MOA be terminated, it is understood that the protectiveness of the remedy concurred in may be reconsidered and that additional measures may need to be taken to adequately ensure necessary future protection of human health and the environment.

WHAT IMPACTS WOULD THE CLEANUP HAVE ON THE LOCAL COMMUNITY?

There would be no impacts to the surrounding communities because groundwater underlying PAFB is not used for potable water. The natural attenuation and LTM alternative includes administrative actions to limit the use of groundwater until cleanup levels have been reached. Additionally, residential use of the LF 1-4 is not occurring nor is it expected in the near future. As long as PAFB remains an active military installation, LF 1-4 are expected to continue supporting recreational and/or industrial land uses. Land use controls will maintained in order to limit exposure to surface water and ensure that fish from the site are not consumed.

WHY DOES THE 45th SW IRP TEAM RECOMMEND THIS REMEDY?

The team recommends the proposed remedy because the naturally occurring attenuation processes observed at the site are sufficient for the removal of low concentrations of pesticides and metals. The LTM program will be used to assess and document reduction in contaminant concentrations to the cleanup goals. The land use controls will also prevent exposure to contaminants prior to the cleanup levels being achieved. The proposed remedy meets the four general standards for corrective measures.

NEXT STEPS

The 45th SW IRP team will review all comments on this SB to determine if the proposed remedy needs modification prior to implementation and prior to incorporating the proposed remedy into the PAFB HSWA permit. If the proposed remedy is determined to be appropriate for implementation, then a long-term monitoring program will be continued, the land use controls will be initiated, and a LUCIP will be developed and incorporated into the MOA.

LAND USE CONTROL IMPLEMENTATION PLAN

LANDFILLS NO. 1, 2, 3, AND 4
SOLID WASTE MANAGEMENT UNITS 22-25 (SWMU NOs. 22, 23, 24, 25)
45TH SPACE WING
PATRICK AIR FORCE BASE
BREVARD COUNTY, FLORIDA

Facility Description

Landfills No. 1 through 4 are located at the southern end of Patrick Air Force Base. The landfills, which occupy a combined area of approximately 140 acres, are currently inactive. During operation, the landfills were maintained as trench and fill landfills. Operations at Landfill 1 occurred from 1940 to 1948, at Landfill 2 from 1950 to 1956, and at Landfill 3 and Landfill 4 from 1956 to 1961. Subsequent to completion of operations at each location, the landfills were covered with sandy soil and dredged sediments from the Banana River. The landfill areas were developed as follows: adjacent to Landfill 1, base housing, commissary, and exchange were built throughout the 1950's, 60's and 80's; a golf course, located on Landfill 2 and Landfill 4, was constructed in 1964; and munitions storage area at Landfill 3 was constructed in the 1960's.

Location (Reference Site Map on last page of this document)

P022			P023		
Site Plan Coordinate	**Northing**	**Easting**	**Site Plan Coordinate**	**Northing**	**Easting**
North	1411781.35	784366.11	North	1414601.14	782952.05
West	1411507.36	783949.30	West	1414506.20	782772.17
South	1411043.92	784482.70	South	1412917.26	783401.75
East	1411239.21	784890.76	East	1413656.77	783776.50
P024			**P025**		
Site Plan Coordinate	**Northing**	**Easting**	**Site Plan Coordinate**	**Northing**	**Easting**
North	1414267.32	781737.36	North	1412624.28	781398.86
West	1413053.89	781148.01	West	1411364.46	780282.44
South	1412884.88	781468.70	South	1411072.55	780620.44
East	1413257.57	781863.06	East	1412030.22	782028.77

Please contact the 45 SW Installation Restoration Program Office to obtain additional information, including:
the 45 SW Land Use Controls Operation Plan; the PAFB HSWA Permit; a complete record of corrective actions at Landfill Nos. 1 through 4; or other related documents, guidance, and regulations. The IRP office can be reached by phone at (321) 853-0965. Information can also be obtained via the IRP website at http://www.mission-support.org/45SW_IRP_EA

LUCIP
LF 1-4 (SWMU NO. 22-25)
PATRICK AIR FORCE BASE
OCT 2001

Objective
Implementation of site-specific land use controls to protect against exposure to contaminated soil and shallow groundwater, to prevent consumption of the shallow groundwater, to prohibit fishing on the site, and to prevent uncontrolled contact with landfill contents.

Land Use Controls (LUCs) to be Implemented:
Administrative:

- The property will be prohibited from residential or other non-industrial development without prior written notification to the Florida Department of Environmental Protection (FDEP) and the United States Environmental Protection Agency (USEPA) concerning the SWMU land use change. Dependent on site conditions and the nature and intensity of the proposed land use change, additional site investigations and assessments could be required for the United States Air Force (USAF). Based on these analyses, additional remedial measures may be required prior to land use change.
- Perform and document baseline LUC audit upon finalization of the Statement of Basis.
- Perform and document quarterly LUC compliance inspections in accordance with 45th SW LUC Operations Manual.
- Perform, document, and report an annual audit on LUC implementation, maintenance, and compliance in accordance with the 45th SW LUC Operations Manual and the current PAFB Corrective Action Management Plan (CAMP).
- The property Land Use Control Implementation Plan (LUCIP) shall remain in effect until:
  a) Changes to applicable Federal and State risk-based clean-up standards occur which indicate site contaminants no longer pose potential residential risk; or
  b) Reduction in site contaminant concentrations to below Federal and State residential risk-based clean-up standards occurs.

Soil:

- Soils will not be disturbed or moved during property development, maintenance or construction, without:
  a) USAF review, coordination, and approval of the proposed construction/ development plans via AF Form 103 (Base Civil Engineer Work Clearance Request), 332 (Base Civil Engineer Work Request), 813 (Request for Environmental Impact Analysis), or similar process;
  b) Ensuring proper engineering controls are in-place so that unauthorized release or disposal of the affected media does not occur. This includes conducting appropriate testing and developing a disposal plan in accordance with the LUC Operations Manual prior to off-site disposal; and
  c) Use of proper personal protection equipment by site workers, as determined by the project proponent's occupational health and safety advisor.

Please contact the 45 SW Installation Restoration Program Office to obtain additional information, including:
the 45 SW Land Use Controls Operation Plan; the PAFB HSWA Permit; a complete record of corrective actions at Landfill Nos. 1 through 4; or other related documents, guidance, and regulations. The IRP office can be reached by phone at (321) 853-0965. Information can also be obtained via the IRP website at http://www.mission-support.org/45SW_IRP_EA

- The site will be posted with proper warning signs in accordance with the LUC Operations Manual and the PAFB Hazardous and Solid Waste Amendments (HSWA) Permit.

Groundwater:

- The consumptive use of the site's surficial aquifer groundwater will be prohibited.
- Incidental consumption and dermal exposure to groundwater from the surficial aquifer will be prevented. This will be addressed by the project proponent's health and safety advisor.
- Groundwater will not be contacted, pumped, or discharged during property development, maintenance, or construction, without:
  a) USAF review, coordination, and approval of the proposed construction/ development plans via AF Form 103 (Base Civil Engineer Work Clearance Request), 332 (Base Civil Engineer Work Request), 813 (Request for Environmental Impact Analysis), or similar process;
  b) Ensuring proper engineering controls are in-place so that unauthorized release or disposal of the affected media (groundwater) does not occur. This includes conducting appropriate testing and developing a disposal plan in accordance with the LUC Operations Manual prior to any pumping or discharge of groundwater; and
  c) Use of proper personal protection equipment by site workers, as determined by the project proponent's occupational health and safety advisor.
- USAF will institute a long term monitoring (LTM) program of groundwater in the surficial aquifer in accordance with an approved LTM work plan and the CAMP as part of the PAFB HSWA Permit. Reports will be submitted annually, along with revised work plan recommendations, until such a time as the relevant regulatory agencies agree that contaminant concentrations in groundwater no longer warrant LTM.
- The site will be posted with proper warning signs in accordance with the LUC Operations Manual and the PAFB HSWA permit.

Surface Water/Sediment:

- The consumptive use of fish and/or other biota from the site's surface water / sediment will be prohibited.
- Dermal exposure to surface water/sediments on the site will be prevented. This will be addressed by the projects proponent's health and safety advisor.
- The site will be posted with proper warning signs in accordance with the LUC Operations Manual and the PAFB HSWA permit.
- USAF will institute an LTM program of surface water in accordance with an approved long term monitoring work plan and the CAMP. Reports will be submitted annually, along with revised work plan recommendations, until such a time as the relevant regulatory agencies agree that contaminant concentrations in surface water no longer warrant LTM.

- Surface waters/sediments will not be contacted, disturbed, pumped, or discharged during property development, maintenance, or construction, without:
  a) USAF review, coordination, and approval of the proposed construction/ development plans via AF Form 103 (Base Civil Engineer Work Clearance Request), 332 (Base Civil Engineer Work Request), 813 (Request for Environmental Impact Analysis), or similar process;
  b) Ensuring proper engineering controls are in-place so that unauthorized release or disposal of the affected media (surface water/sediment) does not occur. This includes conducting appropriate testing and developing a disposal plan in accordance with the LUC Operations Manual prior to any pumping, discharge, or off-site disposal of surface water/sediment; and
  c) Employment of proper personal protection equipment by Site workers, as determined by the project proponent's occupational health and safety advisor.
- USAF will institute a monitoring program of fish tissue in accordance with an approved monitoring work plan and the CAMP. Reports will be submitted annually, along with revised work plan recommendations, until such a time as the relevant regulatory agencies agree that contaminant concentrations no longer warrant monitoring.

Landfill:

- Due to the presence of a closed landfill, development, maintenance, and construction is restricted without:
  a) USAF review, coordination, and approval of the proposed construction/ development plans via AF Form 103 (Base Civil Engineer Work Clearance Request), 332 (Base Civil Engineer Work Request), 813 (Request for Environmental Impact Analysis), or similar process;
  b) Ensuring proper engineering controls are in-place so that landfill cover is not penetrated and landfill contents are not contacted or released. In the event that the landfill cover is breached, additional remedial measures may be required;
  c) Ensuring proper engineering controls are in-place to address specialized technical concerns relating to landfill integrity management. These may include: controls for differential settlement, erosion control, surface water run on/off and methane management; and
  d) Use of proper personal protection equipment by site workers, as determined by the project proponent's occupational health and safety advisor.

Statement of Basis:

The Statement of Basis (SB) is currently being reviewed. It is anticipated that the SB will be accepted/incorporated into the HSWA Permit, scheduled for issuance in November 2001.

Additional Information:

Long Term Monitoring Plan: Natural Attenuation (NA) is evaluated through LTM. Currently, as per the LTM Workplan and Annual Report, monitoring wells and surface

water locations are sampled annually. The scope and magnitude of the LTM program are reviewed and adjusted annually, based on recent data trends.

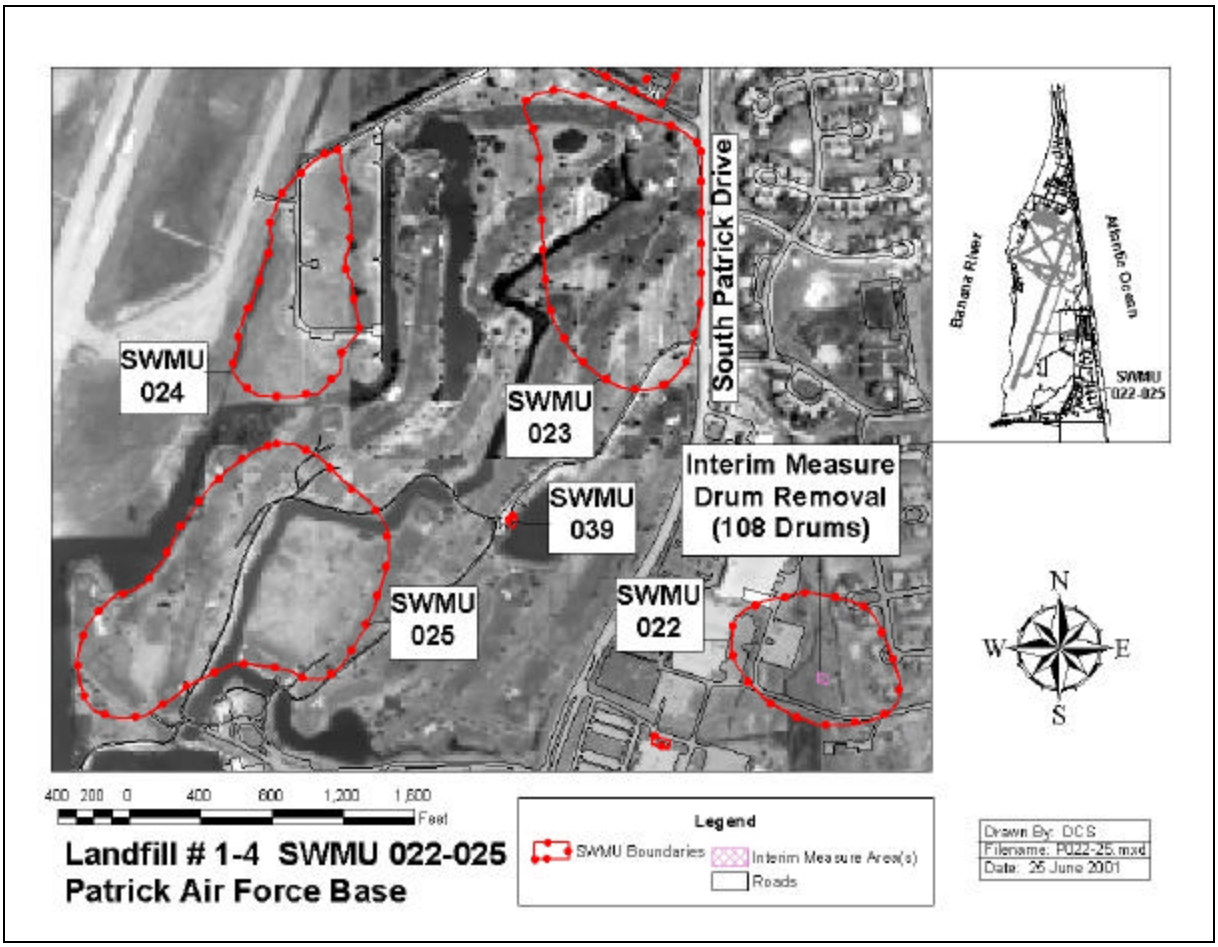
Pertinent Document Reference:

Remedial Investigation/Feasibility Study, Landfill PLF-1 through PLF-4, SWMU No. 22 -25, O'Brien & Gere Engineers, Inc., March 1997.

Interim Measures/Long Term Monitoring (IM/LTM) Work Plan, Landfill PLF-1 through PLF-4, SWMU No. 22 –25, Parsons Engineering Science, Inc., January 1998.

2000 Annual Long Term Monitoring (LTM) Report / 2001 LTM Work Plan / 5-Year Work Plan for LTM, Landfill PLF-1 through PLF-4, SWMU No. 22 -25, Parsons Engineering Science, Inc., September 2000.

Landfill No. 1, 2, 3, and 4 – Site Map



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